



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,622	07/03/2001	John G. Apostolopoulos	10012162-1	5149
22879 7590 05/12/2010 HEWLETT-PACKARD COMPANY Intellectual Property Administration 3404 E. Harmony Road Mail Stop 35 FORT COLLINS, CO 80528				
EXAMINER				
HOSSAIN, TANIM M				
ART UNIT		PAPER NUMBER		
2445				
NOTIFICATION DATE		DELIVERY MODE		
05/12/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM

ipa.mail@hp.com

laura.m.clark@hp.com

Office Action Summary

Application No.

09/899,622

Applicant(s)

APOSTOLOPOULOS ET AL.

Examiner

Tanim Hossain

Art Unit

2445

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-11 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/02)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-11, and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abrahamsson (U.S. 2001/0040871) in view of Ehrman (U.S. 2002/0040479).

As per claim 1, Abrahamsson teaches a method for streaming media data to a client, said method comprising: encoding an item of content comprising media data to be streamed to said client into a first multiple description bitstream and into a second multiple description bitstream, wherein said first multiple description bitstream and said second multiple description bitstream (MDB) each consist of complimentary information that is not duplicative and are decodable independent of one another such that said MDB is decodable without utilizing any information comprised within said second MDB and said second MDB is decodable without utilizing any information comprised within said first MDB (paragraphs 0016-0018, 0031-0034); distributing concurrently said first and second MDB throughout a network, such that said first and second MDBs are sent to said client via a plurality of transmission paths, wherein said client decodes said item of content at a first quality should only said first MDB be received at said client, wherein said client decodes said item of content at a second quality should only said second

MDB be received at said client, and wherein said client decodes said item of content at a quality greater than either of said first or second quality should both said first and said second MDBs be received at said client (paragraphs 0016-0018, 0031-0034, 0037, 0039, 0048-0049, 0051).

Abrahamsson does not specifically teach the distribution of bitstreams to a plurality of servers placed at intermediate nodes throughout a network. Ehrman teaches the distribution of bitstreams to a plurality of servers and then allowing a client to receive the bitstreams from the plurality of servers (figure 1; paragraphs 0018-0023). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ability to divide the bitstreams and send them to separate servers such that a client may receive the bitstreams from a plurality of paths, as taught by Ehrman in the system of Abrahamsson. The motivation for doing so lies in the fact that Abrahamsson contemplates path diversity through receiving packets from differing paths, but does not specifically disclose the differing paths correspond to differing servers. By including the transmission of data by different servers to one client, as taught by Ehrman in the system of Abrahamsson, transmission speed and system efficiency increases. All inventions are from the same field of endeavor, namely the streaming of multimedia through a network.

As per claim 4, Abrahamsson-Ehrman further teaches that said encoding further comprises: encoding said item of media data into a first and a second complementary multiple description bitstream wherein each of said first and second complementary multiple description bitstreams does not include encoded media data that is included in the other of said first and second complementary multiple description bitstreams (Abrahamsson: 0016-0018, 0031-0034).

As per claim 5, Abrahamsson-Ehrman further teaches that said item of media data is selected from the group consisting of audio-based data, speech-based data, image-based data, graphic-data, and web page-based data (Abrahamsson: 0016-0018, 0031-0034).

As per claim 6, Abrahamsson-Ehrman further teaches that said distributing further comprises: distributing said first multiple description bitstream to a first server and distributing said second multiple description bitstream to a second server (Ehrman: 0018-0023).

As per claim 7, Abrahamsson-Ehrman teaches the method for streaming media data to a client as recited in claim 1, wherein said client is a mobile client (Abrahamsson: 0012).

As per claim 8, Abrahamsson-Ehrman teaches the method for streaming media data to a client as recited in claim 7, wherein the step comprises: distributing said first and second multiple description bitstreams to servers placed along a wired/wireless gateway (Abrahamsson: 0016-0018, 0031-0034).

As per claim 9, Abrahamsson-Ehrman further teaches that said method does not require complete duplication of said media data in order to achieve path diversity (Abrahamsson: 0016-0018, 0031-0034).

As per claim 10, Abrahamsson-Ehrman teaches the method for streaming media data to a client as recited in claim 1, wherein said method is performed in a network system selected from the group consisting of: wired and wired networks; wired and wireless networks; wireless and wired networks; and wireless and wireless networks (Abrahamsson: 0016-0018, 0031-0034).

As per claim 11, Abrahamsson-Ehrman teaches a method for achieving reliability and efficiency and for reducing single points of failure in the streaming of media data to a client, said method comprising: encoding an item comprising media data to be streamed to said client into a

first complementary multiple description bitstream and into a second complementary multiple description bitstream, each of said first and second complementary multiple description bitstreams consisting of complementary information that is not duplicative and not included in the other of said first and second complementary multiple description bitstreams, and wherein said first multiple description bitstream is designed so that said item of a first quality is decoded by said client with only said first multiple description bitstream received at said client and without utilizing any information comprised within said second multiple description bitstream, wherein said second multiple description bitstream is designed so that said item of a second quality is decoded by said client with only said second multiple description bitstream received at said client and without utilizing any information comprised within said multiple description bitstream, and wherein said item of a quality greater than said first or second quality is decoded by said client with both said first and said second multiple description bitstreams received at said client (Abrahamsson: 0016-0018, 0031-0034); and distributing concurrently said first complementary multiple description bitstream and said second complementary multiple description bitstream to a plurality of servers placed at intermediate nodes throughout a network, such that said first and second multiple description bitstreams are dispatched to said client via a plurality of transmission paths (Ehrman: 0018-0023).

Claims 14-19 are rejected on the same bases as claims 5-10 respectively, as claims 14-19 teach a method of implementing claims 5-10 respectively.

Claims 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abrahamsson-Ehrman in view of Krueger (U.S. 6,308,222).

As per claim 20, Abrahamsson-Ehrman teaches a system for streaming media data to a client, said system comprising: a first server having first memory coupled thereto, said first memory having a first multiple description bitstream of encoded said media data stored thereon, said first server adapted to transmit said first multiple description bitstream to a client via a first path (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023); and a second server having second memory coupled thereto, said second memory having a second multiple description bitstream of encoded said media data stored thereon, wherein said first multiple description bitstream and said second multiple description bitstream each consist of complimentary information that is not duplicative and are decodable independent of one another such that said first MDB is decodable without utilizing any information comprised within said second MDB and said second MDB is decodable without utilizing any information comprised within said first MDB, and wherein said first and second MDBs have approximately a same bitrate (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023), said second server adapted to transmit said second multiple description bitstream to said client via said second path, said first and second servers concurrently transmitting said first and second multiple description bitstreams such that said first and second multiple description bitstreams are provided to said client via a plurality of transmission paths, wherein said client decodes an item of content at a first quality should only said first multiple description bitstream be received at said client, wherein said client decodes said item of content at a second quality should only said second multiple description bitstream be received at said client, and wherein said client decodes said item of content at a quality greater than either of said first or second quality should both said first

and said second multiple description bitstreams be received at said client (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023).

Abrahamsson-Ehrman does not specifically teach that the second bitstream is transcoded to a reduced bit rate according to bandwidth requirements and capabilities. Krueger teaches the transmission of data from a server to a client, and transcoding the data based on a variety of client requirements, including available bandwidth for its path through the network (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ability to transcode data in view of bandwidth capabilities, as taught by Krueger in the system of Abrahamsson-Ehrman. The motivation for doing so lies in the fact that transcoding would allow for stream-quality commensurate with system capability, so as to optimize the user's experience. All inventions are from the same field of endeavor, namely the efficient streaming of data through a network.

As per claim 21, Abrahamsson-Ehrman-Krueger further teaches that the system further comprises: a content server coupled to said first server and said second server, said content server adapted to provide said first multiple description bitstream of encoded said media data to said memory coupled to said first server, said content server further adapted to provide said second multiple description bitstream of encoded said media data to said memory coupled to said second server (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023).

Claim 22 is rejected under Abrahamsson-Ehrman-Krueger on the same basis as claim 5, which is rejected under Abrahamsson-Ehrman, because claim 22 is a system for implementing the method of claim 5. The Krueger reference is necessarily included in the rejection of claim 22, as its parent claim, claim 20, is rejected under Abrahamsson-Ehrman-Krueger.

As per claim 23, Abrahamsson-Ehrman-Krueger teaches the system for streaming media data to a client of claim 20, wherein said client is a mobile client (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023)

As per claim 24, Abrahamsson-Ehrman-Krueger further teaches the system for streaming media data to a client, wherein said first server is placed along a wired/wireless gateway of a network (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023).

As per claim 25, Abrahamsson-Ehrman-Krueger further teaches the system for streaming media data to a client, wherein said second server is placed along a wired/wireless gateway of a network (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023).

As per claim 26, Abrahamsson-Ehrman-Krueger teaches the system for streaming media data to a client of claim 20, wherein first server and said second server reside within a network system selected from the group consisting of: wired and wired networks; wired and wireless networks; wireless and wired networks; and wireless and wireless networks (Abrahamsson: 0016-0018, 0031-0034; Ehrman: 0018-0023).

Response to Remarks

Applicant's remarks filed on March 24, 2010 have fully been considered.

Applicant asserts that the cited references do not teach "distributing concurrently said first and second multiple description bitstreams (MDB)," as claimed. Examiner respectfully disagrees.

Paragraph 0049 of Abrahamsson describes the MDBs as denoted by D_1 and D_2 , and the bitstreams are divided into segments n , $n+1$, $n+2$, etc. Paragraph 0054 describes that the two segment descriptions D_1 and D_2 (that is, the MDBs) are delivered together: " $D_2(n)$ is to be scheduled in the same packet 522 as $D_1(n+1)$." This is also illustrated in Figure 5, in which D_1 and D_2 bitstream segments are transmitted in the same packet, i.e., simultaneously. This then clearly constitutes the "distributing concurrently said first and second multiple description bitstreams," as claimed.

Paragraph 0016 further teaches the concurrent transmittal of two different descriptions through two different channels, where the received signal is reconstructed based on the number of descriptions received. This also constitutes the limitation as claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is (571)272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571/272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tanim Hossain
Patent Examiner
Art Unit 2445

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445